

International Rectifier

82CNQ030A

SCHOTTKY RECTIFIER
New GenIII D-61 Package

80 Amp

Major Ratings and Characteristics

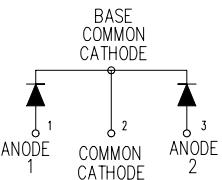
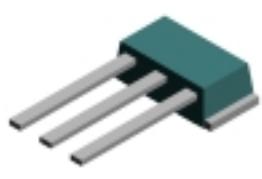
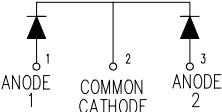
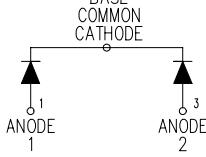
Characteristics	82CNQ030A	Units
$I_{F(AV)}$ Rectangular waveform	80	A
V_{RRM}	30	V
I_{FSM} @ $t_p = 5\mu s$ sine	5100	A
V_F @ $40A_{pk}, T_J = 125^\circ C$ (perleg)	0.37	V
T_J range	-55 to 150	°C

Description/Features

The 82CNQ030A center tap Schottky rectifier module has been optimized for very low forward voltage drop, with moderate leakage. The proprietary barrier technology allows for reliable operation up to $150^\circ C$ junction temperature. Typical applications are in switching power supplies, converters, free-wheeling diodes, and reverse battery protection.

- $150^\circ C T_J$ operation
- Dual center tap module
- Very low forward voltage drop
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- *New fully transfer-mold low profile, small footprint, high current package*

Case Styles

82CNQ...A	82CNQ...ASM	82CNQ...ASL
  D61-8	  D61-8-SM	  D61-8-SL

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Voltage Ratings

Part number	82CNQ030A		
V_R Max. DC Reverse Voltage (V)			
V_{RWM} Max. Working Peak Reverse Voltage (V)	30		

Absolute Maximum Ratings

Parameters	82CNQ	Units	Conditions
$I_{F(AV)}$ Max.AverageForwardCurrent * See Fig. 5	80	A	50%dutycycle@ $T_c = 119^\circ C$,rectangularwaveform
I_{FSM} Max.PeakOneCycleNon-Repetitive Surge Current (Per Leg) * See Fig. 7	5100	A	5μs Sine or 3μs Rect. pulse
	880		10msSineor6msRect. pulse
E_{AS} Non-RepetitiveAvalancheEnergy (Per Leg)	36	mJ	$T_j = 25^\circ C$, $I_{AS} = 8$ Amps, $L = 1.12$ mH
I_{AR} RepetitiveAvalancheCurrent (Per Leg)	8	A	Currentdecayinglinearlytozeroin 1 μsec Frequency limited by T_j max. $V_A = 1.5 \times V_R$ typical

Electrical Specifications

Parameters	82CNQ	Units	Conditions		
V_{FM} Max. Forward Voltage Drop (Per Leg) * See Fig. 1 (1)	0.47	V	@ 40A	$T_j = 25^\circ C$	
	0.55	V	@ 80A		
	0.37	V	@ 40A		
	0.47	V	@ 80A	$T_j = 125^\circ C$	
I_{RM} Max. Reverse Leakage Current (Per Leg) * See Fig. 2 (1)	5	mA	$T_j = 25^\circ C$	$V_R = \text{rated } V_R$	
	280	mA	$T_j = 125^\circ C$		
C_T Max. Junction Capacitance (Per Leg)	3700	pF	$V_R = 5V_{DC}$ (test signal range 100Khz to 1Mhz) $25^\circ C$		
L_S Typical Series Inductance (Per Leg)	5.5	nH	Measured lead to lead 5mm from package body		
dv/dt Max. Voltage Rate of Change (Rated V_R)	10,000	V/ μs			

(1) Pulse Width < 300μs, Duty Cycle <2%

Thermal-Mechanical Specifications

Parameters	82CNQ	Units	Conditions
T_j Max.JunctionTemperatureRange	-55 to 150	°C	
T_{stg} Max.StorageTemperatureRange	-55 to 150	°C	
R_{thJC} Max.ThermalResistanceJunction to Case (Per Leg)	0.85	°C/W	DCoperation * See Fig. 4
R_{thJC} Max.ThermalResistanceJunction to Case (Per Package)	0.42	°C/W	DCoperation
R_{thCS} Typical ThermalResistance, Case to Heatsink (D61-8 Only)	0.30	°C/W	Mountingsurface,smoothandgreased Device flatness < 5 mils
wt ApproximateWeight	7.8(0.28)	g(oz.)	
T MountingTorque (D61-8 Only)	Min.	40(35)	Kg-cm (lbf-in)
	Max.	58(50)	

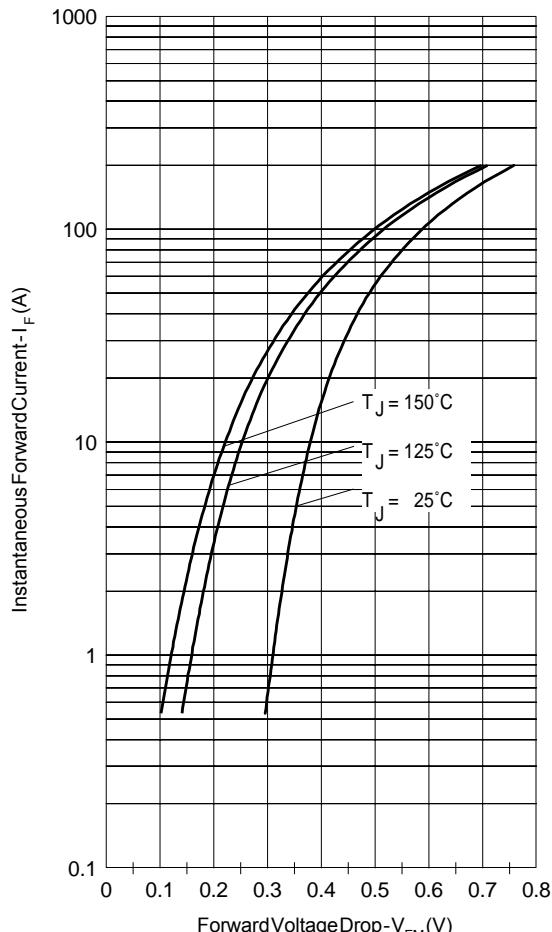


Fig.1-Max. Forward Voltage Drop Characteristics
(PerLeg)

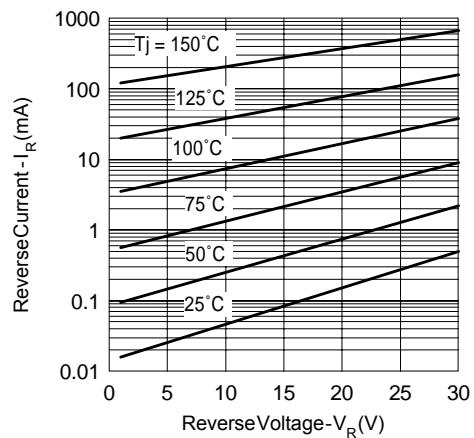


Fig.2-Typical Values Of Reverse Current
Vs. Reverse Voltage (PerLeg)

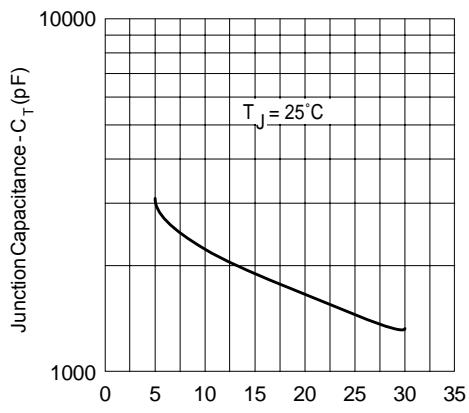


Fig.3-Typical Junction Capacitance
Vs. Reverse Voltage (PerLeg)

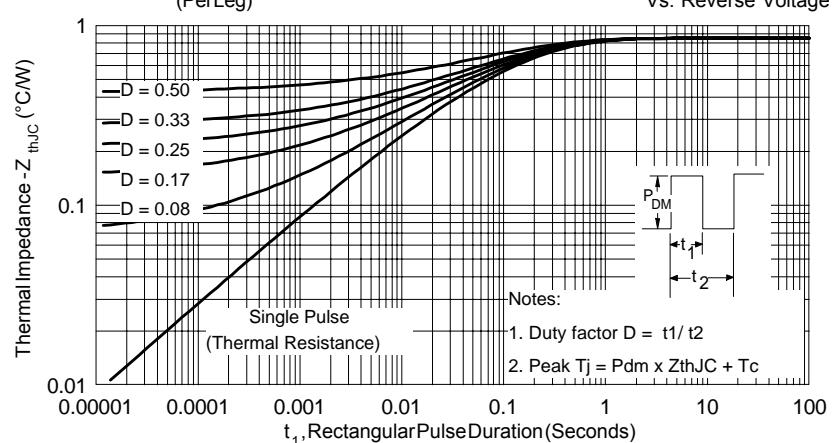


Fig.4-Max. Thermal Impedance Z_{thJC} Characteristics (PerLeg)

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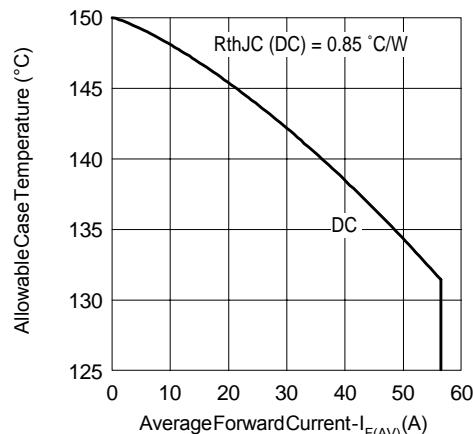


Fig. 5-Max. Allowable Case Temperature Vs. Average Forward Current (Per Leg)

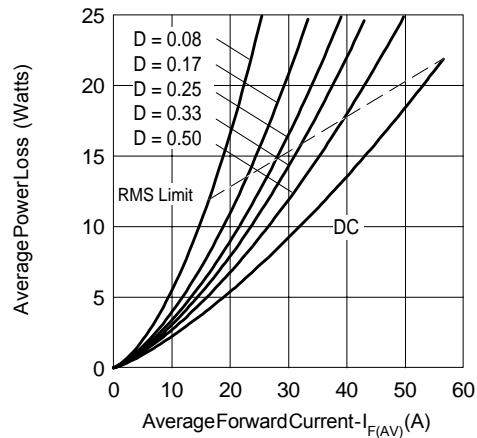


Fig. 6-Forward Power Loss Characteristics (Per Leg)

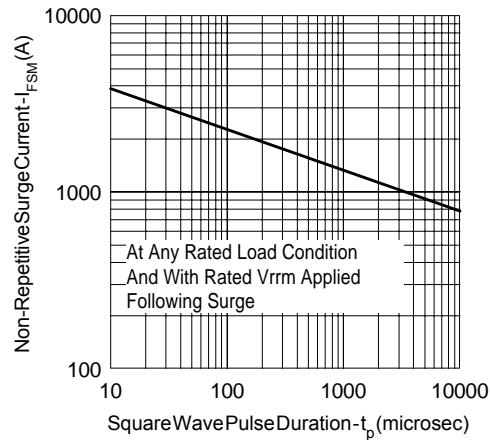


Fig. 7-Max. Non-Repetitive Surge Current (Per Leg)

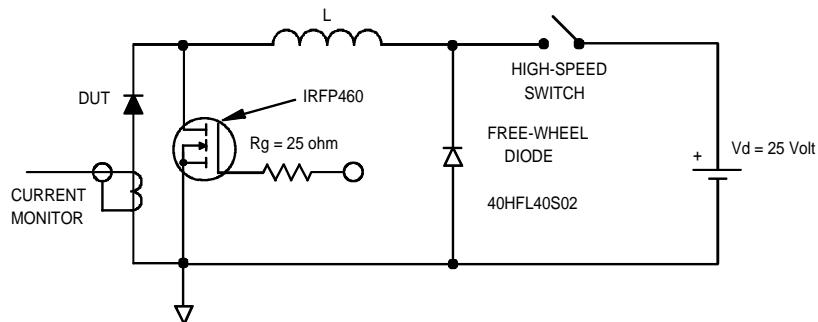
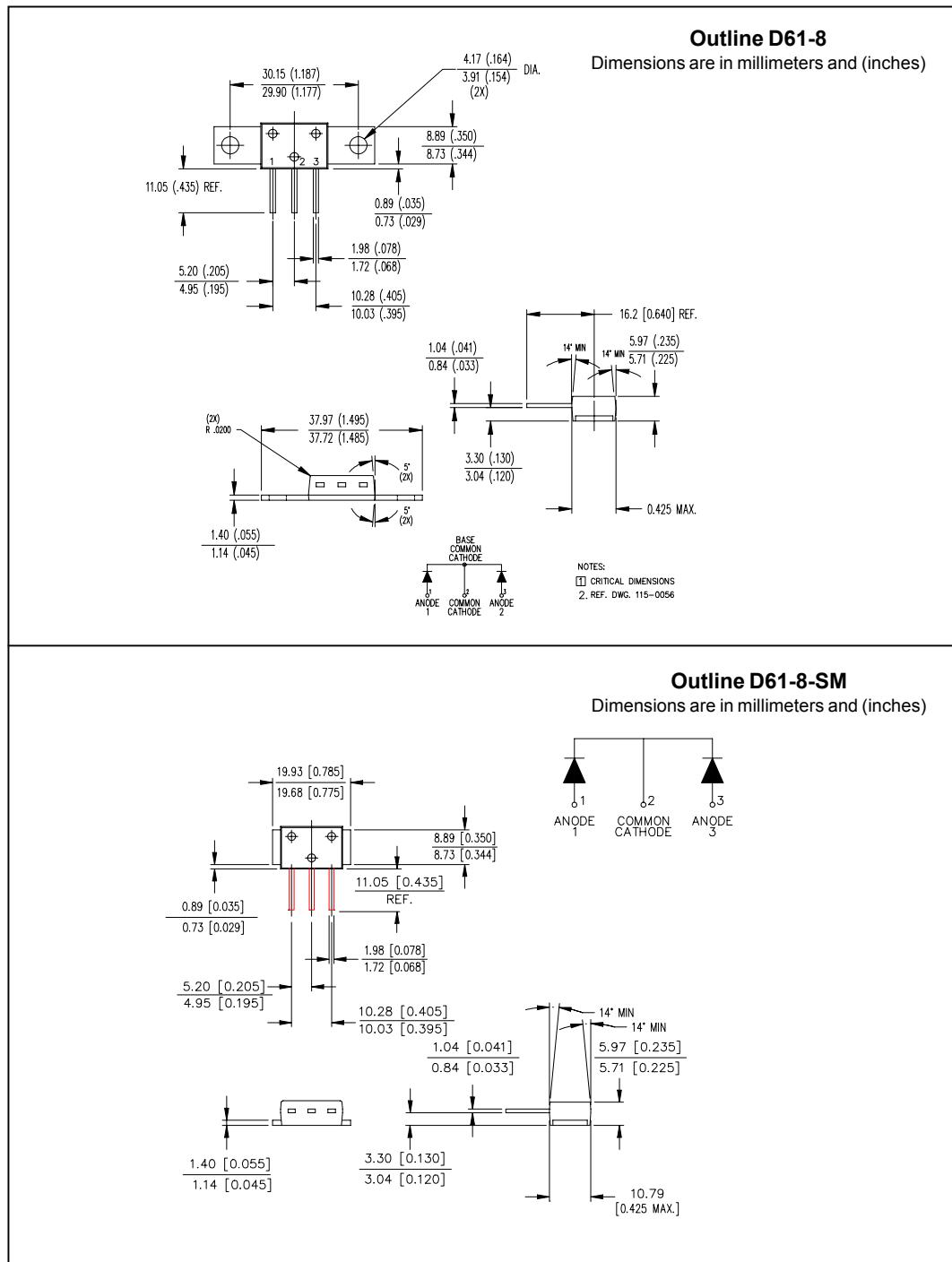
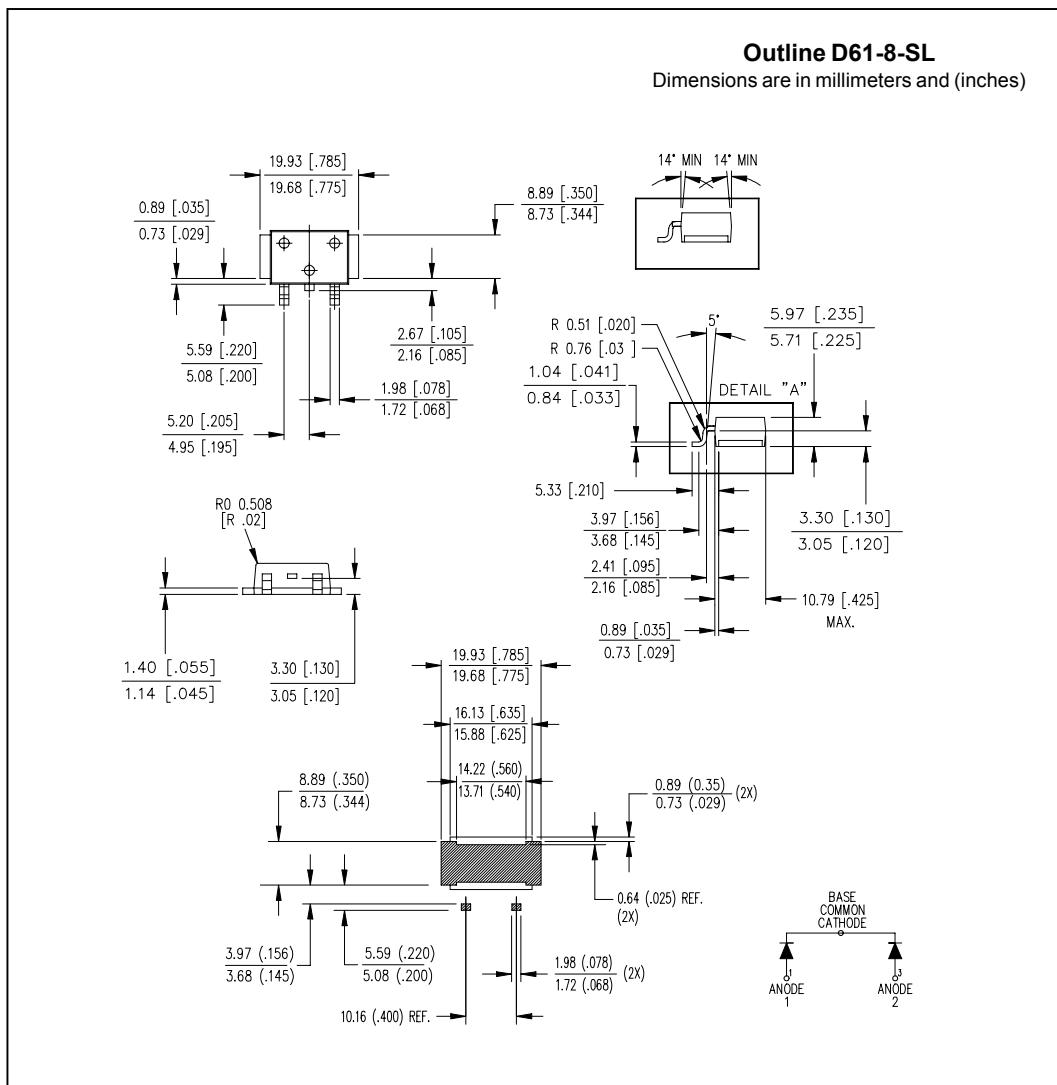


Fig. 8-Unclamped Inductive Test Circuit

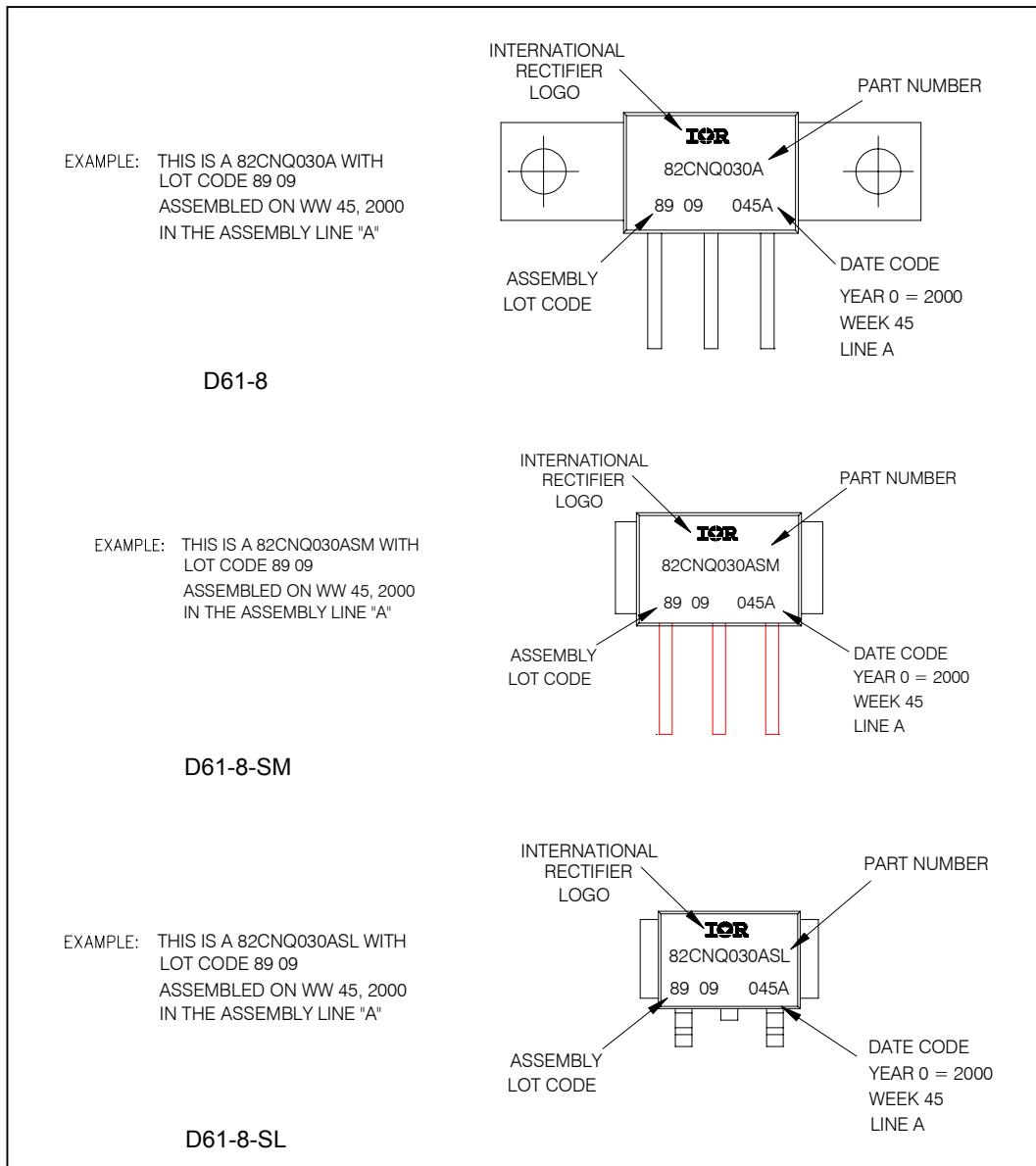
Outline Table



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Part Marking Information



82CNQ030A

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Data and specifications subject to change without notice.
This product has been designed and qualified for Industrial Level.
Qualification Standards can be found on IR's Web site.

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